

TRANSACTIONS
OF THE
AMERICAN SOCIETY OF CIVIL ENGINEERS

INDEX
VOLUME 108

1943

SUBJECT INDEX, PAGE 1685

AUTHOR INDEX, PAGE 1695

Titles of papers are in quotation marks when given with the
author's name.

TRANSACTIONS
OF THE
AMERICAN SOCIETY OF CIVIL ENGINEERS

INDEX
VOLUME 109

1943
SIXTH EDITION
PUBLISHED BY THE
AMERICAN SOCIETY OF CIVIL ENGINEERS
1801 L STREET, N.W., WASHINGTON, D. C. 20036
This is a reprint of the original edition published in 1943.
The original edition was published in 1943.
The original edition was published in 1943.

AD
AE
AG
AI
AL
AM
AP
AR
BE
BI
BR

VOLUME 108

SUBJECT INDEX

ADDRESSES.

- "The Society Today and Tomorrow." Address at the Annual Convention, Los Angeles, California, July 28, 1943. Ezra B. Whitman. 1517.

AERATION.

- Removal of grease and oil in sewage by aeration. 516.

AGRICULTURE.

- "Classification of Irrigable Lands." W. W. Johnston. (With Discussion.) 656.

AIRPORTS.

- "Resistance of Soft Fill to Static Wheel Loads." W. Watters Pagon. (With Discussion.) 738.

AIRWAYS.

- "Development of Transportation in the United States." J. E. Teal. (With Discussion.) 1.

AMERICAN SOCIETY OF CIVIL ENGINEERS.

- "The Society Today and Tomorrow." Address at the Annual Convention, Los Angeles, California, July 28, 1943. Ezra B. Whitman. 1517.

APPARATUS.

- Study of air entrainment. 1436.

ARCHES.

- See BRIDGES.

BEAMS.

- "Lateral Stability of Unsymmetrical I-Beams and Trusses in Bending." George Winter. 247. Discussion: Robert K. Schrader, H. N. Hill, and George Winter. 261.

- "Numerical Procedure for Computing Deflections, Moments, and Buckling Loads." N. M. Newmark. (With Discussion.) 1161.

BIBLIOGRAPHIES.

- Sewage treatment. 522.
Suspended matter in streams. 955.
Water softening. 279.
Weir coefficients. 782.

BRIDGES.

- "Design of St. Georges Tied Arch Span." J. M. Garrelts. 543. Discussion: R. W. Abbott, Jacob Karol, Alexander Dodge, Carlos A. Bejarano, A. A. Eremin, A. M. Freudenthal, C. H. Gronquist, Harold E. Langley, and J. M. Garrelts. 555.

CLAY.

- "Earth Pressure and Shearing Resistance of Plastic Clay: A Symposium." Karl Terzaghi, Ralph B. Peck, and W. S. Housel. (With Discussion.) 965.

COLUMNS.

- "Numerical Procedure for Computing Deflections, Moments, and Buckling Loads." N. M. Newmark. (With Discussion.) 1161.

CONTRACTORS' PLANT.

- "Resistance of Soft Fill to Static Wheel Loads." W. Watters Pagon. (With Discussion.) 738.

COSTS OF WORK.

- Costs allocated to various systems of Tennessee Valley Authority Projects. 180.

DAMS.

- "Allocation of the Tennessee Valley Authority Projects." Theodore B. Parker. (With Discussion.) 174.
- "Hydraulic Design of Drop Structures for Gully Control." B. T. Morris and D. C. Johnson. (With Discussion.) 887.
- "Model Tests on Structures for Hydroelectric Developments." L. M. Davis. (With Discussion.) 803.
- "Permeability of Mud Mountain Dam Core Material." Allen S. Cary, Boyd H. Walter, and Howard T. Harstad. (With Discussion.) 719.
- "Stability of Granular Materials." R. E. Glover and F. E. Cornwell. (With Discussion.) 46.

DEPRECIATION.

See **VALUATION.**

DISCHARGE.

- Summarized discharge records in the Mississippi River basin. 624.

DRAINAGE.

- "Drainage of Leveed Areas in Mountainous Valleys." Gordon R. Williams. 83. Discussion: Merrill Bernard, L. K. Sherman, C. O. Clark, W. W. Horner, Walter T. Wilson, W. B. Langbein, and Gordon R. Williams. 97.
- "Hydrodynamics of Model Storm Sewer Inlets Applied to Design." G. S. Tapley. 409. Discussion: Ralph W. Powell, and G. S. Tapley. 444.

EARTH PRESSURES.

- Boussinesq formulas for determining pressures. 124.
- "Earth Pressure and Shearing Resistance of Plastic Clay: A Symposium." Karl Terzaghi, Ralph B. Peck, and W. S. Housel. 965. Discussion: Ralph H. Burke, L. G. Lenhardt, George E. Shafer, M. E. Chamberlain, A. A. Eremin, A. E. Cummings, D. M. Burmister, Gregory P. Tschobotarioff, D. P. Krynine, L. F. Cooling, Karl Terzaghi, Ralph B. Peck, and W. S. Housel. 1059.

EARTHQUAKES.

- "Analytical and Experimental Methods in Engineering Seismology." M. A. Biot. 365. Discussion: George R. Rich, N. J. Hoff, Merit P. White, N. H. Heck, Frank Neumann, Jacob Feld, George W. Housner, Homer M. Hadley, Robert E. Glover, and M. A. Biot. 386.

Limiting slopes for various earthquake intensities. 61.

ECONOMICS.

- "Basic Economic Considerations Affecting Single and Multiple Purpose Projects." Otis M. Page. (With Discussion.) 353.

See also **VALUATION.**

EROSION.

- "Hydraulic Design of Drop Structures for Gully Control." B. T. Morris and D. C. Johnson. (With Discussion.) 887.

Tests at Safe Harbor. 818.

FILTRATION.

- "Reduction of Mineral Content in Water with Organic Zeolites." R. F. Goudey. (With Discussion.) 269.

See also **SEWAGE DISPOSAL.**

FINANCE.

Relationship to public works. 1255.

FLOODS.

- "Allocation of the Tennessee Valley Authority Projects." Theodore B. Parker. (With Discussion.) 174.

"Basic Economic Considerations Affecting Single and Multiple Purpose Projects." Otis M. Page. 353. Discussion: G. B. Pillsbury. 363.

"Drainage of Leveed Areas in Mountainous Valleys." Gordon R. Williams. (With Discussion.) 83.

"Statistical Analysis in Hydrology." L. R. Beard. (With Discussion.) 1110.

"Unusual Events and Their Relation to Federal Water Policies." W. G. Hoyt. (With Discussion.) 290.

FLUMES.

- "Entrainment of Air in Flowing Water: A Symposium." L. Standish Hall, and A. A. Kalinske and James M. Robertson. (With Discussion.) 1393.

FOUNDATIONS.

"Analytical and Experimental Methods in Engineering Seismology." M. A. Biot. (With Discussion.) 365.

"Timber Friction Pile Foundations." Frank M. Masters. (With Discussion.) 115.

GRAPHICAL CHARTS.

"Distribution Graphs of Suspended-Matter Concentration." Joe W. Johnson. (With Discussion.) 941.

"Statistical Analysis in Hydrology." L. R. Beard. (With Discussion.) 1110.

HIGHWAYS AND ROADS.

"Design of Sign Letter Sizes." Adolphus Mitchell and T. W. Forbes. 233.
Discussion: Guy Kelcey, Charles M. Noble, and Adolphus Mitchell and
T. W. Forbes. 243.

"Development of Transportation in the United States." J. E. Teal. (With
Discussion.) 1.

HYDRAULICS.

"Energy Loss at the Base of a Free Overfall." Walter L. Moore. 1343.
Discussion: Merit P. White, Boris A. Bakhmeteff and N. V. Feodoroff,
Carl E. Kindsvater, J. E. Christiansen, L. Standish Hall, Hunter Rouse,
and Walter L. Moore. 1361.

"Hydraulic Design of Drop Structures for Gully Control." B. T. Morris
and D. C. Johnson. (With Discussion.) 887.

"Hydrodynamics of Model Storm Sewer Inlets Applied to Design." G. S.
Tapley. (With Discussion.) 409.

"Model Tests on Structures for Hydroelectric Developments." L. M. Davis.
803. Discussion: Emil P. Schuleen, C. M. Allen, Adolf A. Meyer, and
L. M. Davis. 824.

"Statistical Analysis in Hydrology." L. R. Beard. (With Discussion.)
1110.

"Viscosity and Surface Tension Effects on V-Notch Weir Coefficients."
Arno T. Lenz. (With Discussion.) 759.

See also **WATER, FLOW OF.**

HYDROELECTRIC POWER PLANTS.

See **POWER PLANTS.**

IMHOFF TANKS.

See **SEPTIC TANKS.**

INSTRUMENTS.

Mechanical analyzer for use in connection with earthquake study. 369.

"Viscosity and Surface Tension Effects on V-Notch Weir Coefficients."
Arno T. Lenz. (With Discussion.) 759.

IRRIGATION.

"Classification of Irrigable Lands." W. W. Johnston. (With Discussion.)
656.

"Unusual Events and Their Relation to Federal Water Policies." W. G.
Hoyt. (With Discussion.) 290.

JOINTS.

"Moment Balance: A Self-Checking Analysis of Rigidly Jointed Frames."
R. J. Cornish. (With Discussion.) 677.

LAND.

"Classification of Irrigable Lands." W. W. Johnston. 656. Discussion:
R. Earl Storie, Walter W. Weir, W. L. Powers, and W. W. Johnston.
672.

LEVEES.

"Drainage of Leveed Areas in Mountainous Valleys." Gordon R. Williams. (With Discussion.) 83.

MEMOIRS OF DECEASED MEMBERS.

See name of member in Author Index.

MODELS.

"Energy Loss at the Base of a Free Overfall." Walter L. Moore. (With Discussion.) 1343.

"Model Tests on Structures for Hydroelectric Developments." L. M. Davis. (With Discussion.) 803.

MOMENTS.

"Bending Moments in the Walls of Rectangular Tanks." Dana Young. (With Discussion.) 217.

"Moment Balance: A Self-Checking Analysis of Rigidly Jointed Frames." R. J. Cornish. 677. Discussion: D. D. Matthews, William A. Larsen, A. A. Eremin, L. E. Grinter, B. J. Aleck, Frederick S. Merritt, Ralph W. Stewart, G. W. Stokes, Bruce Jameyson, R. E. Bowles, William Morris, John Mason, and R. J. Cornish. 685.

"Numerical Procedure for Computing Deflections, Moments, and Buckling Loads." N. M. Newmark. (With Discussion.) 1161.

NAVIGATION.

"Allocation of the Tennessee Valley Authority Projects." Theodore B. Parker. (With Discussion.) 174.

See also RIVERS.

PILES.

"Timber Friction Pile Foundations." Frank M. Masters. 115. Discussion: E. H. Connor, Glenn B. Woodruff, Jacob Feld, G. G. Greulich, G. S. Paxson, Raymond D. Mindlin, John W. Solomon, A. E. Cummings, and Frank M. Masters. 141.

PIPE LINES.

"Development of Transportation in the United States." J. E. Teal. (With Discussion.) 1.

POWER.

"Allocation of the Tennessee Valley Authority Projects." Theodore B. Parker. (With Discussion.) 174.

See also WATER POWER.

POWER PLANTS.

"Model Tests on Structures for Hydroelectric Developments." L. M. Davis. (With Discussion.) 803.

PUBLIC WORKS.

"Allocation of the Tennessee Valley Authority Projects." Theodore B. Parker. 174. Discussion: Malcolm Elliott, E. L. Chandler, Eugene L. Grant, Sherman M. Woodward, Albert R. Arledge, C. W. Watchorn and F. A. Allner, and Theodore B. Parker. 188.

- "Fundamental Aspects of the Depreciation Problem: A Symposium." Maurice R. Scharff, J. A. Walls, Eugene L. Grant, and Roy W. Crum and Robley Winfrey. (With Discussion.) 1235.

RAILROADS.

- "Development of Transportation in the United States." J. E. Teal. (With Discussion.) 1.

See also SUBWAYS, TUNNELS.

RAINFALL.

- "Drainage of Leveed Areas in Mountainous Valleys." Gordon R. Williams. (With Discussion.) 83.
- "Early Contributions to Mississippi River Hydrology." C. S. Jarvis. (With Discussion.) 605.
- "Statistical Analysis in Hydrology." L. R. Beard. (With Discussion.) 1110.

REGIONAL PLANNING.

- "Unusual Events and Their Relation to Federal Water Policies." W. G. Hoyt. (With Discussion.) 290.

RIVERS.

- "Allocation of the Tennessee Valley Authority Projects." Theodore B. Parker. (With Discussion.) 174.
- "Distribution Graphs of Suspended-Matter Concentration." Joe W. Johnson. (With Discussion.) 941.
- "Early Contributions to Mississippi River Hydrology." C. S. Jarvis. 605. Discussion: Robert Follansbee, R. W. Davenport, Charles Senour, John C. Hoyt, George O. Guesmer, H. T. Cory, and C. S. Jarvis. 629.

RUNOFF.

- "Drainage of Leveed Areas in Mountainous Valleys." Gordon R. Williams. (With Discussion.) 83.
- "Statistical Analysis in Hydrology." L. R. Beard. 1110. Discussion: L. Standish Hall, H. Alden Foster, Paul V. Hodges, Joe W. Johnson, R. H. Blythe, Jr., R. W. Davenport, Edward J. Bednarski, Ralph W. Powell, E. J. Gumbel, and L. R. Beard. 1122.

See also RAINFALL.

SANITARY ENGINEERING.

- "The Grease Problem in Sewage Treatment." Almon L. Fales and Samuel A. Greeley. (With Discussion.) 507.

See also DRAINAGE, FILTRATION, SEWERAGE, WATER.

SEDIMENTATION.

- "Distribution Graphs of Suspended-Matter Concentration." Joe W. Johnson. 941. Discussion: H. A. Einstein, G. C. Dobson, Thomas R. Camp, Frank S. Bailey, and Joe W. Johnson. 957.

SEEPAGE.

- "Permeability of Mud Mountain Dam Core Material." Allen S. Cary, Boyd H. Walter, and Howard T. Harstad. (With Discussion.) 719.

SEPTIC TANKS.

Use of Imhoff tanks for grease removal from sewage. 514.

SETTLING BASINS.

Use of sedimentation tanks for grease removal from sewage. 514.

SEWAGE DISPOSAL.

"The Grease Problem in Sewage Treatment." Almon L. Fales and Samuel A. Greeley. 507. Discussion: Arthur D. Weston, Harvey F. Ludwig, W. S. Mahlie, Denis Dickinson, Charles R. Velzy, F. M. Dawson, and Almon L. Fales and Samuel A. Greeley. 525.

SEWAGE TREATMENT.

See SEWAGE DISPOSAL.

SEWERAGE.

"Hydrodynamics of Model Storm Sewer Inlets Applied to Design." G. S. Tapley. (With Discussion.) 409.

SLABS.

"Stress Concentrations in Plates Loaded Over Small Areas." H. M. Westergaard. (With Discussion.) 831.

SOILS.

"Classification of Irrigable Lands." W. W. Johnston. (With Discussion.) 656.

"Earth Pressure and Shearing Resistance of Plastic Clay: A Symposium." Karl Terzaghi, Ralph B. Peck, and W. S. Housel. (With Discussion.) 965.

"Permeability of Mud Mountain Dam Core Material." Allen S. Cary, Boyd H. Walter, and Howard T. Harstad. 719. Discussion: F. H. Kellogg, J. E. Christiansen and Milton Fireman, William P. Creager, and Allen S. Cary, Boyd H. Walter, and Howard T. Harstad. 729.

"Resistance of Soft Fill to Static Wheel Loads." W. Watters Pagon. 738. Discussion: Jacob Feld, and W. Watters Pagon. 756.

"Stability of Granular Materials." R. E. Glover and F. E. Cornwell. 46. Discussion: R. G. Hennes, Stanley U. Bescoter, A. Hrennikoff, D. P. Krynine, and R. E. Glover and F. E. Cornwell. 64.

SPILLWAYS.

"Entrainment of Air in Flowing Water: A Symposium." L. Standish Hall, and A. A. Kalinske and James M. Robertson. (With Discussion.) 1393.

STREAM FLOW.

See WATER, FLOW OF, IN OPEN CHANNELS.

STREAMS.

See RIVERS.

STRESS AND STRAIN.

"Effect of Variation of Elastic Characteristics on Static Unknowns." A. Hrennikoff. (With Discussion.) 317.

"Lateral Stability of Unsymmetrical I-Beams and Trusses in Bending." George Winter. (With Discussion.) 247.

"Mechanics of Creep for Structural Analysis." Joseph Marin. (With Discussion.) 453.

"Stress Concentrations in Plates Loaded Over Small Areas." H. M. Westergaard. (With Discussion.) 831.

STRUCTURES, THEORY OF.

"Effect of Variation of Elastic Characteristics on Static Unknowns." A. Hrennikoff. 317. Discussion: A. H. Finlay, Stefan J. Fraenkel, Joseph A. Wise, and A. Hrennikoff. 340.

"Mechanics of Creep for Structural Analysis." Joseph Marin. 453. Discussion: A. Hrennikoff, C. A. P. Turner, Ralph W. Stewart, and Joseph Marin. 470.

"Moment Balance: A Self-Checking Analysis of Rigidly Jointed Frames." R. J. Cornish. (With Discussion.) 677.

"Numerical Procedure for Computing Deflections, Moments, and Buckling Loads." N. M. Newmark. 1161. Discussion: Bruce Johnston, M. S. Ketchum, Jr., John B. Wilbur, Ralph W. Stewart, Stefan J. Fraenkel, Alfred S. Niles, Camillo Weiss, A. A. Eremin, Myron L. Gossard, Robert A. Williamson, I. Oesterblom, C. W. Dunham, and N. M. Newmark. 1189.

"Stress Concentrations in Plates Loaded Over Small Areas." H. M. Westergaard. 831. Discussion: George R. Rich, Dana Young, A. Nádaí, L. A. MacColl, L. W. Teller and Earl C. Sutherland, D. L. Holl, C. A. P. Turner, and H. M. Westergaard. 857.

SUBWAYS.

"Earth Pressure and Shearing Resistance of Plastic Clay: A Symposium." Karl Terzaghi, Ralph B. Peck, and W. S. Houssel. (With Discussion.) 965.

SURVEYING.

"Relative Angular, Linear, and Traverse Accuracies in City Surveys." S. A. Bauer. 577. Discussion: Cleveland B. Coe, W. H. Rayner, Philip Kismet, George D. Whitmore, C. C. Miner, and W. O. Byrd, G. Brooks Earnest, and S. A. Bauer. 591.

TANKS.

"Bending Moments in the Walls of Rectangular Tanks." Dana Young. 217. Discussion: I. K. Silverman, and Dana Young. 231.

TIMBER.

"Timber Friction Pile Foundations." Frank M. Masters. (With Discussion.) 115.

TRAFFIC.

Increase in freight and passenger traffic on railroads. 41.

Passenger-car traffic compared with truck traffic. 10.

See also **TRANSPORTATION.**

TRANSPORTATION.

- "Development of Transportation in the United States." J. E. Teal. 1.
Discussion: Fred Lavis, William J. Wilgus, Joseph B. Eastman, J. L.
Campbell, W. W. Crosby, W. B. Irwin, F. R. Schanck, and J. E. Teal.
24.

TRIANGULATION.

See **SURVEYING.**

TRUSSES.

- "Lateral Stability of Unsymmetrical I-Beams and Trusses in Bending."
George Winter. (With Discussion.) 247.

TUNNELS.

- "Earth Pressure and Shearing Resistance of Plastic Clay: A Symposium."
Karl Terzaghi, Ralph B. Peck, and W. S. Housel. (With Discussion.)
965.

VALUATION.

- "Fundamental Aspects of the Depreciation Problem: A Symposium." Maurice R. Scharff, J. A. Walls, Eugene L. Grant, and Roy W. Crum and Robley Winfrey. 1235. Discussion: Edwin F. Wendt and L. T. Fleming, Anson Marston, William G. Atwood, George E. Goldthwaite, Nathan B. Jacobs, H. J. Flagg, Nelson Lee Smith, C. Beverley Benson, Paul T. Norton, Jr., H. L. Ripley, Carroll A. Farwell, Thomas R. Agg, Conde B. McCullough, W. V. Burnell, Roger L. Morrison, Wallace B. Carr, W. L. Waters, A. G. Mott, David A. Kosh, E. G. Walker, K. Lee Hyder, James T. Ryan, John C. Page, John S. Worley, John F. Miller, Fred Asa Barnes, Robert F. Legget and Erwin E. Hart, Kernan Robson, J. A. Walls, and Eugene L. Grant. 1262.

Various theories of joint-cost allocations. 177.

VIBRATION.

- "Analytical and Experimental Methods in Engineering Seismology." M. A. Biot. (With Discussion.) 365.

WATER.

- "Reduction of Mineral Content in Water with Organic Zeolites." R. F. Goudey. 269. Discussion: James M. Montgomery, George L. Davenport, Jr., Robert Spurr Weston, and Harvey F. Ludwig and Russell G. Ludwig. 281.
- "Unusual Events and Their Relation to Federal Water Policies." W. G. Hoyt. 290. Discussion: Edward H. Sargent, Dana M. Wood, James S. Sweet, J. L. Campbell, David J. Guy, Albert S. Fry, and W. G. Hoyt. 304.

WATER, FLOW OF, IN OPEN CHANNELS.

- "Entrainment of Air in Flowing Water: A Symposium." L. Standish Hall, and A. A. Kalinske and James M. Robertson. 1393. Discussion: Warren DeLapp, Karl R. Kennison, Robert T. Knapp, Carl E. Kindsvater, J. H. Douma, Joe W. Johnson, J. C. Stevens, D. C. McConaughy, T. J. Corwin, Jr., L. Standish Hall, and A. A. Kalinske and J. M. Robertson. 1448.

"Hydraulic Design of Drop Structures for Gully Control." B. T. Morris and D. C. Johnson. 887. Discussion: John Hedberg, L. Standish Hall, J. E. Christiansen, Walter T. Wilson, N. A. Christensen and Dwight Gunder, Boris A. Bakhmeteff and Nicholas V. Feodoroff, G. H. Hickox, and B. T. Morris and D. C. Johnson. 919.

"Profile Curves for Open-Channel Flow." Dwight F. Gunder. 481. Discussion: Carl Rohwer, C. J. Posey, J. C. Stevens, Boris A. Bakhmeteff and Nicholas V. Feodoroff, Hunter Rouse, and Dwight F. Gunder. 489.

WATER, FLOW OF, IN PIPES.

"Entrainment of Air in Flowing Water: A Symposium." L. Standish Hall, and A. A. Kalinske and James M. Robertson. (With Discussion.) 1393.

WATER, FLOW OF, OVER DAMS AND WEIRS.

"Energy Loss at the Base of a Free Overfall." Walter L. Moore. (With Discussion.) 1343.

"Hydrodynamics of Model Storm Sewer Inlets Applied to Design." G. S. Tapley. (With Discussion.) 409.

"Viscosity and Surface Tension Effects on V-Notch Weir Coefficients." Arno T. Lenz. 759. Discussion: A. A. Kalinske, Glen N. Cox and F. J. Germano, Emery H. Willes, Ralph W. Powell, G. H. Hickox, and Arno T. Lenz. 783.

WATER POWER.

"Unusual Events and Their Relation to Federal Water Policies." W. G. Hoyt. (With Discussion.) 290.

WATER SOFTENING.

See **WATER.**

WATERWAYS.

"Development of Transportation in the United States." J. E. Teal. (With Discussion.) 1.

See also **RIVERS.**

WEIRS.

See **WATER, FLOW OF, OVER DAMS AND WEIRS.**

AUTHOR INDEX

ABBETT, R. W.

Tied arch span. 555.

AGG, THOMAS R.

Depreciation. 1287.

ALECK, B. J.

Moment balance. 693.

ALLEN, C. M.

Hydromodels. 828.

ALLNER, FREDERICK ABELS.

Memoir of. 1551.

TVA projects. 210.

ALLTON, ROBERT ADAMS.

Memoir of. 1553.

ARLEDGE, ALBERT R.

TVA projects. 205.

ATWOOD, THOMAS CLARK.

Memoir of. 1556.

ATWOOD, WILLIAM G.

Depreciation. 1268.

BAILEY, FRANK S.

Suspended-matter concentration. 960.

BAKHMETEYF, BORIS A.

Energy loss. 1364.

Gully control. 930.

Open-channel flow. 492.

BARNES, FRED ASA.

Depreciation. 1323.

BARROWS, GEORGE ELLSWORTH.

Memoir of. 1558.

BATTIE, HERBERT SCANDLIN.

Memoir of. 1657.

BAUER, S. A.

"Relative Angular, Linear, and Traverse Accuracies in City Surveys." 577.

BEARD, L. R.

"Statistical Analysis in Hydrology." 1110.

BEDNARSKI, EDWARD J.

Statistical analysis. 1141.

- BEJARANO, CARLOS A.**
Tied arch span. 566.
- BENSCOTER, STANLEY U.**
Granular materials. 65.
- BENSON, C. BEVERLEY.**
Depreciation. 1278.
- BERNARD, MERRILL.**
Drainage of leveed areas. 97.
- BIOT, M. A.**
"Analytical and Experimental Methods in Engineering Seismology." 365.
- BLAKELEY, GEORGE HENRY.**
Memoir of. 1560.
- BLYTHE, R. H., JR.**
Statistical analysis. 1137.
- BOWLES, R. E.**
Moment balance. 703.
- BROOMALL, CAROLUS MORTON.**
Memoir of. 1561.
- BROWN, ROBERT FRANCIS.**
Memoir of. 1564.
- BURKE, RALPH H.**
Plastic clay. 1059.
- BURMISTER, D. M.**
Plastic clay. 1072.
- BURNELL, W. V.**
Depreciation. 1293.
- BUTLER, ALFRED DICKEY.**
Memoir of. 1565.
- BYRD, W. O.**
Surveying accuracies. 598.
- CAMP, THOMAS R.**
Suspended-matter concentration. 959.
- CAMPBELL, J. L.**
Federal water policies. 307.
Transportation. 30.
- CARR, WALLACE B.**
Depreciation. 1297.
- CARY, ALLEN S.**
"Permeability of Mud Mountain Dam Core Material." 719.

CHADWICK, CHESTER ROBERT.

Memoir of. 1659.

CHAMBERLAIN, M. E.

Plastic clay. 1064.

CHANDLER, E. L.

TVA projects. 189.

CHRISTENSEN, N. A.

Gully control. 927.

CHRISTIANSSEN, J. E.

Energy loss. 1375.

Gully control. 921.

Mud Mountain Dam. 733.

CLARK, C. O.

Drainage of leveed areas. 100.

COE, CLEVELAND B.

Surveying accuracies. 591.

COLLINGS, WILLIAM TATEM, JR.

Memoir of. 1568.

CONNER, E. H.

Friction pile foundations. 141.

COOLING, L. F.

Plastic clay. 1086.

CORNISH, R. J.

"Moment Balance: A Self-Checking Analysis of Rigidly Jointed Frames." 677.

CORNWELL, F. E.

"Stability of Granular Materials." 46.

CORTI, JOSEPH JAMES.

Memoir of. 1660.

CORWIN, T. J., JR.

Air entrainment. 1493.

CORY, H. T.

Mississippi River. 638.

COX, GLEN N.

V-notch coefficients. 784.

CREAGER, WILLIAM P.

Mud Mountain Dam. 735.

CROSBY, W. W.

Transportation. 32.

CRUM, ROY W.

"Fundamental Aspects of the Depreciation Problem: A Symposium: Relationship to Public Works and Government Finance." 1255.

CUMMINGS, A. E.

Friction pile foundations. 162.

Plastic clay. 1067.

DARROW, MARIUS SCHOONMAKER.

Memoir of. 1664.

DAVENPORT, GEORGE L., JR.

Organic zeolites. 283.

DAVENPORT, R. W.

Mississippi River. 629.

Statistical analysis. 1139.

DAVIS, L. M.

"Model Tests on Structures for Hydroelectric Developments." 803.

DAWSON, EDWIN FORD.

Memoir of. 1570.

DAWSON, F. M.

Grease in sewage. 539.

DeLAPP, WARREN.

Air entrainment. 1448.

DENISE, CHARLES MEIRS.

Memoir of. 1571.

DICKINSON, DENIS.

Grease in sewage. 537.

DOBSON, G. C.

Suspended-matter concentration. 958.

DODGE, ALEXANDER.

Tied arch span. 558.

DOMENECH, MANUEL VICTOR.

Memoir of. 1573.

DOUGHERTY, EDWARD JAMES.

Memoir of. 1575.

DOUGLASS, ARTHUR SYLVESTER.

Memoir of. 1576.

DOUMA, J. H.

Air entrainment. 1462.

DUNHAM, C. W.

Deflections and moments. 1224.

EARNEST, G. BROOKS.

Surveying accuracies. 600.

EASTMAN, JOSEPH B.

Transportation. 29.

EINSTEIN, H. A.

Suspended-matter concentration. 957.

ELLIOTT, MALCOLM.

TVA projects. 188.

EREMIN, A. A.

Deflections and moments. 1211.

Moment balance. 690.

Plastic clay. 1066.

Tied arch span. 568.

FALES, ALMON L.

"The Grease Problem in Sewage Treatment." 507.

FARWELL, CARROLL A.

Depreciation. 1286.

FELD, JACOB.

Engineering seismology. 397.

Friction pile foundations. 143.

Wheel loads in soft fill. 756.

FEODOROFF, NICHOLAS V.

Energy loss. 1364.

Gully control. 930.

Open-channel flow. 492.

FINLAY, A. H.

Elastic characteristics. 340.

FIREMAN, MILTON.

Mud Mountain Dam. 733.

FLAGG, H. J.

Depreciation. 1274.

FLEMING, L. T.

Depreciation. 1262.

FOLLANSBEE, ROBERT.

Mississippi River. 629.

FORBES, T. W.

"Design of Sign Letter Sizes." 233.

FOSTER, H. ALDEN.

Statistical analysis. 1127.

FRAENKEL, STEFAN J.

Deflections and moments. 1201.

Elastic characteristics. 343.

FREUDENTHAL, A. M.

Tied arch span. 569.

FRY, ALBERT S.

Federal water policies. 312.

FUSTON, WALTER JACOB.

Memoir of. 1579.

GARRELTS, J. M.

"Design of St. Georges Tied Arch Span." 543.

GERMANO, F. J.

V-notch coefficients. 784.

GILLHAM, PHILIP DAKIN.

Memoir of. 1580.

GLOVER, ROBERT E.

Engineering seismology. 405.

"Stability of Granular Materials." 46.

GOLDTHWAITE, GEORGE E.

Depreciation. 1269.

GORTON, WILLARD LIVERMORE.

Memoir of. 1666.

GOSSARD, MYRON L.

Deflections and moments. 1212.

GOUDEY, R. F.

"Reduction of Mineral Content in Water with Organic Zeolites." 269.

GRANT, EUGENE L.

"Fundamental Aspects of the Depreciation Problem: A Symposium: Relationship to Competitive Industry." 1242.

TVA projects. 202.

GREELEY, SAMUEL A.

"The Grease Problem in Sewage Treatment." 507.

GREENE, CARLETON.

Memoir of. 1582.

GREENWOOD, ALBERT HENRY.

Memoir of. 1670.

GREULICH, G. G.

Friction pile foundations. 144.

GRIFFIN, ARTHUR JAMES.

Memoir of. 1584.

GRIMM, CLAUDE IRVING.

Memoir of. 1585.

GRINTER, L. E.

Moment balance. 691.

GRONQUIST, C. H.

Tied arch span. 570.

GUESMER, GEORGE O.

Mississippi River. 638.

GUMBEL, E. J.

Statistical analysis. 1144.

GUNDER, DWIGHT.

Gully control. 927.

"Profile Curves for Open-Channel Flow." 481.

GUTTERIDGE, ALAN GORDON.

Memoir of. 1587.

GUY, DAVID J.

Federal water policies. 309.

HADLEY, HOMER M.

Engineering seismology. 402.

HALL, L. STANDISH.

Energy loss. 1378.

"Entrainment of Air in Flowing Water: A Symposium: Open Channel Flow at High Velocities." 1394.

Gully control. 919.

Statistical analysis. 1122.

HARKNESS, ANDREW HARKNESS.

Memoir of. 1588.

HARSTAD, HOWARD T.

"Permeability of Mud Mountain Dam Core Material." 719.

HART, ERWIN E.

Depreciation. 1326.

HECK, N. H.

Engineering seismology. 394.

HEDBERG, JOHN.

Gully control. 919.

HENNES, R. G.

Granular materials. 64.

HICKOX, G. H.

Gully control. 932.

V-notch coefficients. 796.

- HICKOX, JAY RUSSELL.**
Memoir of. 1590.
- HILL, H. N.**
Lateral stability. 264.
- HILTON, JOSEPH CHURCHILL.**
Memoir of. 1671.
- HODGES, PAUL V.**
Statistical analysis. 1128.
- HOFF, N. J.**
Engineering seismology. 388.
- HOLL, D. L.**
Stress concentrations in plates. 868.
- HOOD, JOHN MIFFLIN, JR.**
Memoir of. 1592.
- HORNER, W. W.**
Drainage of leveed areas. 103.
- HOUSEL, W. S.**
"Earth Pressure and Shearing Resistance of Plastic Clay: A Symposium:
Earth Pressure on Tunnels." 1037.
- HOUSNER, GEORGE W.**
Engineering seismology. 398.
- HOVEY, OTIS ELLIS.**
Memoir of. 1537.
- HOYT, JOHN C.**
Mississippi River. 637.
- HOYT, W. G.**
"Unusual Events and Their Relation to Federal Water Policies." 290.
- HRENNIKOFF, A.**
"Effect of Variation of Elastic Characteristics on Static Unknowns." 317.
Granular materials. 69.
Mechanics of creep. 470.
- HUTCHINS, JERE CHAMBERLAIN.**
Memoir of. 1594.
- HYDER, K. LEE.**
Depreciation. 1311.
- IRWIN, W. B.**
Transportation. 34.
- JACOBS, NATHAN B.**
Depreciation. 1272.

JACOBY, CLARK ELLSWORTH.

Memoir of. 1598.

JAMEYSON, BRUCE.

Moment balance. 700.

JARVIS, C. S.

"Early Contributions to Mississippi River Hydrology." 605.

JENRICK, WILLIAM FREDERICK.

Memoir of. 1674.

JOHNSON, D. C.

"Hydraulic Design of Drop Structures for Gully Control." 887.

JOHNSON, DAVID CLAYTON.

Memoir of. 1601.

JOHNSON, JOE W.

Air entrainment. 1473.

"Distribution Graphs of Suspended-Matter Concentration." 941.

Statistical analysis. 1130.

JOHNSTON, BRUCE.

Deflections and moments. 1189.

JOHNSTON, W. W.

"Classification of Irrigable Lands." 656.

KALINSKE, A. A.

"Entrainment of Air in Flowing Water: A Symposium: Closed Conduit Flow." 1435.

V-notch coefficients. 783.

KAROL, JACOB.

Tied arch span. 555.

KELCEY, GUY.

Sign letter sizes. 243.

KELLOGG, F. H.

Mud Mountain Dam. 729.

KENNISON, KARL R.

Air entrainment. 1451.

KESTER, FREDERICK HENRY.

Memoir of. 1602.

KETCHUM, M. S., JR.

Deflections and moments. 1193.

KINDSVATER, CARL E.

Air entrainment. 1459.

Energy loss. 1373.

KISSAM, PHILIP.

Surveying accuracies. 594.

KNAPP, ROBERT T.

Air entrainment. 1455.

KOSH, DAVID A.

Depreciation. 1303.

KRAUS, ARTHUR.

Memoir of. 1604.

KRYNINE, D. P.

Granular materials. 72.

Plastic clay. 1078.

LANGBEIN, W. B.

Drainage of leveed areas. 109.

LANGLEY, HAROLD E.

Tied arch span. 572.

LARSEN, WILLIAM A.

Moment balance. 690.

LAVIS, FRED.

Transportation. 24.

LEGGET, ROBERT F.

Depreciation. 1326.

LENHARDT, L. G.

Plastic clay. 1061.

LENZ, ARNO T.

"Viscosity and Surface Tension Effects on V-Notch Weir Coefficients." 759.

LINTON, ROBERT.

Memoir of. 1605.

LIPPINCOTT, JOSEPH BARLOW.

Memoir of. 1543.

LUDWIG, HARVEY F.

Grease in sewage. 535.

Organic zeolites. 286.

LUDWIG, RUSSELL G.

Organic zeolites. 286.

LYMAN, ALBERT KUALII BRICKWOOD.

Memoir of. 1608.

MacCOLL, L. A.

Stress concentrations in plates. 863.

McCLINTOCK, HALLETT EDWARD.

Memoir of. 1675.

McCONAUGHY, D. C.

Air entrainment. 1484.

McCULLOUGH, CONDE B.

Depreciation. 1289.

MAHLIE, W. S.

Grease in sewage. 537.

MARIN, JOSEPH.

"Mechanics of Creep for Structural Analysis." 453.

MARSTON, ANSON.

Depreciation. 1264.

MASON, JOHN.

Moment balance. 706.

MASTERS, FRANK M.

"Timber Friction Pile Foundations." 115.

MATTHEWS, D. D.

Moment balance. 685.

MEIER, WALTER HENRY.

Memoir of. 1609.

MERRITT, FREDERICK S.

Moment balance. 694.

MEYER, ADOLF A.

Hydromodels. 828.

MILLER, JOHN F.

Depreciation. 1322.

MINDLIN, RAYMOND D.

Friction pile foundations. 147.

MINER, C. C.

Surveying accuracies. 598.

MITCHELL, ADOLPHUS.

"Design of Sign Letter Sizes." 233.

MOLER, WILLIAM GRIFFITH.

Memoir of. 1678.

MONTGOMERY, JAMES M.

Organic zeolites. 281.

MOORE, WALTER L.

"Energy Loss at the Base of a Free Overfall." 1343.

MORRIS, B. T.

"Hydraulic Design of Drop Structures for Gully Control." 887.

MORRIS, WILLIAM.

Moment balance. 704.

- MORRISON, ROGER L.**
Depreciation. 1296.
- MOTT, A. G.**
Depreciation. 1301.
- MYERS, CLARENCE EUGENE.**
Memoir of. 1612.
- NÁDAI, A.**
Stress concentrations in plates. 860.
- NEUMANN, FRANK.**
Engineering seismology. 395.
- NEWLIN, JOHN A.**
Memoir of. 1614.
- NEWMARK, N. M.**
"Numerical Procedure for Computing Deflections, Moments, and Buckling Loads." 1161.
- NILES, ALFRED S.**
Deflections and moments. 1206.
- NOBLE, CHARLES M.**
Sign letter sizes. 244.
- NORTON, PAUL T., JR.**
Depreciation. 1282.
- OESTERBLOM, I.**
Deflections and moments. 1224.
- ORCUTT, WILLIAM WARREN.**
Memoir of. 1617.
- PAGE, JOHN C.**
Depreciation. 1316.
- PAGE, OTIS M.**
"Basic Economic Considerations Affecting Single and Multiple Purpose Projects." 353.
- PAGON, W. WATTERS.**
"Resistance of Soft Fill to Static Wheel Loads." 738.
- PARKER, THEODORE B.**
"Allocation of the Tennessee Valley Authority Projects." 174.
- PAXSON, G. S.**
Friction pile foundations. 145.
- PECK, RALPH B.**
"Earth Pressure and Shearing Resistance of Plastic Clay: A Symposium: Earth-Pressure Measurements in Open Cuts, Chicago (Ill.) Subway." 1008.

- PILLSBURY, G. B.**
Flood control. 363.
- POSEY, C. J.**
Open-channel flow. 489.
- POWELL, RALPH W.**
Statistical analysis. 1144.
Storm sewer inlets. 444.
V-notch coefficients. 792.
- POWERS, W. L.**
Land classification. 675.
- PRATT, HENRY BLANCHARD.**
Memoir of. 1622.
- RAYNER, W. H.**
Surveying accuracies. 592.
- REPPERT, CHARLES MILLER.**
Memoir of. 1623.
- RICH, BARZILLAI ALLEN.**
Memoir of. 1625.
- RICH, GEORGE R.**
Engineering seismology. 386.
Stress concentrations in plates. 857.
- RIDDICK, WALLACE CARL.**
Memoir of. 1626.
- RIGHTOR, FRED ELMER.**
Memoir of. 1629.
- RIPLEY, H. L.**
Depreciation. 1284.
- ROBERTSON, JAMES M.**
"Entrainment of Air in Flowing Water: A Symposium: Closed Conduit Flow." 1435.
- ROBSON, KERNAN.**
Depreciation. 1329.
- ROHWER, CARL.**
Open-channel flow. 489.
- ROUSE, HUNTER.**
Energy loss. 1383.
Open-channel flow. 502.
- RYAN, JAMES T.**
Depreciation. 1314.

SARGENT, EDWARD H.

Federal water policies. 304.

SCHANCK, F. R.

Transportation. 36.

SCHARFF, MAURICE R.

"Fundamental Aspects of the Depreciation Problem: A Symposium: Foreword." 1236.

SCHEIN, NATHAN.

Memoir of. 1631.

SCHRADER, ROBERT K.

Lateral stability. 261.

SCHULEEN, EMIL P.

Hydromodels. 824.

SENOUR, CHARLES.

Mississippi River. 633.

SHAFFER, GEORGE E.

Plastic clay. 1062.

SHAW, ARTHUR MONROE.

Memoir of. 1632.

SHERMAN, L. K.

Drainage of leveed areas. 98.

SILVERMAN, I. K.

Rectangular tanks. 231.

SMITH, NELSON LEE.

Depreciation. 1276.

SNOW, FRANK HERBERT.

Memoir of. 1634.

SOLOMON, JOHN W.

Friction pile foundations. 149.

SPELMAN, JOHN RODGERS.

Memoir of. 1638.

STABLER, HERMAN.

Memoir of. 1641.

STARRETT, MILTON GERRY.

Memoir of. 1645.

STEVENS, J. C.

Air entrainment. 1474.

Open-channel flow. 492.

STEWART, RALPH W.

Deflections and moments. 1198.

Mechanics of creep. 477.

Moment balance. 696.

STOKES, G. W.

Moment balance. 698.

STORIE, R. EARL.

Land classification. 672.

STORRS, JOHN WILLIAMS.

Memoir of. 1646.

STRINGFELLOW, HENRY AYLESBURY.

Memoir of. 1680.

SUTHERLAND, EARL C.

Stress concentrations in plates. 864.

SWEET, JAMES S.

Federal water policies. 306.

TALBOT, ARTHUR NEWELL.

Memoir of. 1530.

TAPLEY, G. S.

"Hydrodynamics of Model Storm Sewer Inlets Applied to Design." 409.

TEAL, J. E.

"Development of Transportation in the United States." 1.

TELLER, I. W.

Stress concentrations in plates. 864.

TERZAGHI, KARL."Earth Pressure and Shearing Resistance of Plastic Clay: A Symposium:
Liner-Plate Tunnels on the Chicago (Ill.) Subway." 970.**THOMAS, WILLIAM JOHN.**

Memoir of. 1648.

TOZZER, ARTHUR CLARENCE.

Memoir of. 1649.

TSCHEBOTARIOFF, GREGORY P.

Plastic clay. 1075.

TURNER, C. A. P.

Mechanics of creep. 472.

Stress concentrations in plates. 881.

VELZY, CHARLES R.

Grease in sewage. 538.

WALKER, E. G.

Depreciation. 1307.

WALLS, J. A.

"Fundamental Aspects of the Depreciation Problem: A Symposium: Relationship to Regulated Industry." 1237.

WALTER, BOYD H.

"Permeability of Mud Mountain Dam Core Material." 719.

WALTER, FRANK EDGAR.

Memoir of. 1681.

WATCHORN, C. W.

TVA projects. 210.

WATERS, W. L.

Depreciation. 1300.

WEIR, WALTER W.

Land classification. 672.

WEISS, CAMILLO.

Deflections and moments. 1208.

WENDT, EDWIN F.

Depreciation. 1262.

WESTERGAARD, H. M.

"Stress Concentrations in Plates Loaded Over Small Areas." 831.

WESTON, ARTHUR D.

Grease in sewage. 525.

WESTON, ROBERT SPURR.

Organic zeolites. 284.

WHITE, MERIT P.

Energy loss. 1361.

Engineering seismology. 390.

WHITMAN, EZRA B.

"The Society Today and Tomorrow." Address at the Annual Convention, Los Angeles, California, July 28, 1943. 1517.

WHITMORE, GEORGE D.

Surveying accuracies. 598.

WILBUR, JOHN B.

Deflections and moments. 1194.

WILDER, ALVIN DUMOND.

Memoir of. 1651.

WILGUS, WILLIAM J.

Transportation. 25.

WILLES, EMERY H.

V-notch coefficients. 785.

WILLIAMS, EDWARD GILBERT.

Memoir of. 1653.

WILLIAMS, GORDON R.

"Drainage of Leveed Areas in Mountainous Valleys." 83.

WILLIAMSON, ROBERT A.

Deflections and moments. 1220.

WILSON, WALTER T.

Drainage of leveed areas. 108.

Gully control. 926.

WINFREY, ROBLEY.

"Fundamental Aspects of the Depreciation Problem: A Symposium: Relationship to Public Works and Government Finance." 1255.

WINTER, GEORGE.

"Lateral Stability of Unsymmetrical I-Beams and Trusses in Bending." 247.

WISE, JOSEPH A.

Elastic characteristics. 345.

WOERMANN, JOHN WILLIAM.

Memoir of. 1654.

WOOD, DANA M.

Federal water policies. 304.

WOODRUFF, GLENN B.

Friction pile foundations. 142.

WOODWARD, SHERMAN M.

TVA projects. 203.

WORLEY, JOHN S.

Depreciation. 1321.

YOUNG, DANA.

"Bending Moments in the Walls of Rectangular Tanks." 217.

Stress concentrations in plates. 858.